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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
KIM, RICHARD H	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/804,105	NAKAYOSHI	
	Examiner	Art Unit	
	Richard H. Kim	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 19 March 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1,4, 6, 7, 9-13, 16 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd et al. (US 4,333,708) in view of Aratani et al. (US 6,222,602 B1).

Referring to claims 1, 7, 9, 13, 19, and 20, Boyd et al. discloses a device a method comprising lower and upper substrate (abstract); a plurality of first common electrodes diverging in the pixel region at fixed intervals (Fig. 32, ref. 503); a first pixel electrode in the pixel region between the first common electrodes (Fig. 32, ref. 503); second common electrode (501); and second pixel electrodes on the upper substrate respectively corresponding to the first common electrodes and the first pixel electrodes on the lower substrate; and a liquid crystal layer between the upper and lower substrates (abstract). However, the reference does not disclose data and gate lines crossing each other on the lower substrate to define a pixel region; and a thin film transistor adjacent a crossing of the gate and data lines, wherein the first common electrode is formed on the same layer as the gate line or data line.

Aratani et al. discloses gate and data lines crossing each other on the lower substrate to define a pixel region (13, 10) and a thin film transistor adjacent a crossing of the gate and data lines (11), wherein the first common electrode (1) is formed on the same layer as the gate line or data line (10).

It would have been obvious to one having ordinary skill in the art to employ gate and data lines crossing each other on the lower substrate to define a pixel region since one would be motivated to provide signals to the pixel region to create a display. Further, having the first common electrode formed on the same layer as the gate line or data line would have been obvious in order to improve manufacturing efficiency by fabricating both components in the same step.

Referring to claims 4 and 16, Boyd et al. discloses the device and method previously recited, and further discloses a same voltage (+) applied to the first and second common electrodes (202, 200). However, the reference does not explicitly state that the voltage is from the same external circuit.

It would have been obvious to one having ordinary skill in the art at the time the invention was for the voltage to be from the same external circuit since one would be increase the efficiency in manufacturing the device by using a single circuit to drive both electrodes.

Referring to claims 6 and 18, Boyd et al. discloses the device and method previously recited, but fails to disclose that the first common electrode is formed on a different layer from the first pixel electrode, with an insulating layer interposed between the first common electrode and the first pixel electrode.

Aratani et al. discloses a device wherein the first common electrode is formed on a different layer from the first pixel electrode, with an insulating layer interposed between the first common electrode and the first pixel electrode. (Fig. 5a, ref. 1, 3).

It would have been obvious to one having ordinary skill in the art at the time the invention was made for the first common electrode to be formed on a different layer from the

first pixel electrode, with an insulating layer interposed between the first common electrode and the first pixel electrode since one would be motivated reduce interference between the two electrodes.

Referring to claims 10, Boyd et al. discloses the device wherein the electrode filed parallel to the lower and upper substrate is formed between the first common electrode and the first pixel electrode, and an electrode field parallel to the lower and upper substrates is formed between the second common electrode and the second pixel electrode when applying the voltage to the respective electrodes of the lower and upper substrates (Fig. 42).

Referring to claims 11, 12, 21 and 22, Boyd et al. and Aratani et al. disclose the device previously recited, but fails to disclose the device wherein the pixel and common electrodes are formed of any one of Cu, Cr, Mo, Al, Ti, Ta, and Al alloy or indium tin oxide, zinc oxide, indium oxide, tin-antimony oxide, zinc-aluminum-oxide, and indium-zinc-oxide.

It would have been obvious to one having ordinary skill in the art at the time the invention was made for the pixel and common electrodes to be formed of any one of Cu, Cr, Mo, Al, Ti, Ta, and Al alloy or indium tin oxide, zinc oxide, indium oxide, tin-antimony oxide, zinc-aluminum-oxide, and indium-zinc-oxide since such material are well known in the art to be good conductive materials, thereby reducing power consumption.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd et al. and Aratani et al. in view of Shibahara et al. (US 6,870,587 B2).

Boyd et al. and Aratani et al. disclose the device previously recited, but fails to disclose a black matrix layer on specific portions of the upper substrate except for the pixel regions of the

lower substrate; and a color filter layer on the portions of the upper substrate corresponding to the respective pixel regions of the lower substrate.

Shinahara et al. discloses a device comprising a black matrix layer (13) on specific portions of the upper substrate except for the pixel regions of the lower substrate; and a color filter layer (12) on the portions of the upper substrate corresponding to the respective pixel regions of the lower substrate.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a black matrix layer on specific portions of the upper substrate except for the pixel regions of the lower substrate; and a color filter layer on the portions of the upper substrate corresponding to the respective pixel regions of the lower substrate since one would be motivated to obtain a colored display and also to prevent light leakage between pixel regions.

Allowable Subject Matter

4. Claims 2, 3, 5, 14, 15 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record, taken alone or in combination, fails to teach or disclose a conductive bar on the first pixel electrode to electrically connect the first and second pixel electrodes to each other and an Ag dot in the outermost portion of the lower and upper substrate to connect the first and second common electrodes to each other.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard H. Kim whose telephone number is (571)272-2294. The examiner can normally be reached on 9:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Richard H Kim
Examiner
Art Unit 2871

RHK

ANDREW SCHECHTER
PRIMARY EXAMINER